

Electrical hazards that may result in arc flash

Case History #1

An electrician was working on a circuit breaker panel that he thought was deenergized. After completing the work, the electrician was closing one of the enclosure doors when an arc flash occurred. Electric current from the energized panel moved through the air to the closed panel door. The rapid release of energy caused the panel door to fly open, hitting the worker and knocking him unconscious as the panel continued to arc.

Analysis & Preventive Measures

Although the electrician believed that all power had been deenergized from the electrical panel, this incident could have been prevented by voltage testing the electrical panel before starting work. Taking the time to perform a simple test can ensure workers' safety.

Often arc flashes occur when reenergizing panels after maintenance. Proper cleaning is one method of reducing this hazard.

Case History #2

An electrician and a coworker were retrofitting dated equipment, installing new buckets on a switch gear. The electrician mechanically disconnected the switch, but he did not test it to verify deenergization. As he attempted to remove the switch from the switch gear, an arc flash occurred. The electrician was severely burned and suffered acute respiratory stress.

Analysis & Preventive Measures

Disconnecting the switch was not sufficient to prevent the flow of electricity through the equipment. The equipment should have been voltage tested to verify that it was deenergized before beginning work, as all sources of power to the equipment were not secured.